## Monitoring Waivers

Augusta - Richmond Utilities has complied with all base monitoring requirements for the parameters listed below. The chemical analytical results of this system's water samples demonstrate that the water system's distributed drinking water complies with the chemical monitoring requirements of the Georgia Rules for Safe Drinking Water. Also, the Vulnerability Assessments prepared by EPD show this water system's raw water to not be in a high potential pollution risk situation. This water system is hereby issued chemical monitoring waivers for the below listed synthetic organic compounds from January 1, 2002 to midnight December 31, 2004. It is also issued chemical monitoring waivers for the below listed inorganic compounds from January 1, 2002 to midnight December 31, 2010.

Synthetic Organic Compounds: Alachlor, Aldicarb Sulfone, Aldicarb Sulfoxide, Atrazine, Benzo (A) Pyrene, Carbofuran, Chloradane, Dalapon, Di (2-Ethylhexyl) Adipate, Dibromochloropropane (DBCP), Dinoseb, Diquat, Di (2-Ethylhexyl) Phthalate, Endothall, Endrin, Ethylene Dibromide (EDB), Glyphosate, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxymyl (Vydate), Pentachlorophenol, Picloram, Polychlorinated Biphenyls (PCBs), Simazine, 2,4-D, Toxaphene, 2,4,5-TP (Silvex), 2,3,7,8 - TCDD (Dioxin).

Inorganic Compounds: Asbestos and Cyanide.

## Table Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**NA:** Not applicable

**ND:** Not detected

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

## Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

### REGULATED SUBSTANCES

| SUBSTANCE (UNITS) | YEAR SAMPLED | MCL | MCLG | Surface Water AMOUNT DETECTED | Surface Water RANGE (LOW-HIGH) | Groundwater AMOUNT DETECTED | Groundwater RANGE (LOW-HIGH) | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|---|---|
| **Fluoride** (ppm) | 2003 | 4 | 4 | 0.93 | 0.8-1.19 | 0.95 | 0.34-1.44 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| **Haloacetic Acids [HAAs]** (ppb) | 2003 | 60 | NA | 45.44 | 23-95.5 | 0.40 | ND-4.1 | No | By-product of drinking water disinfection |
| **Nitrate** (ppm) | 2003 | 10 | 10 | ND | NA | 0.86 | ND-2 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| **TTHMs [Total Trihalomethanes]** (ppb) | 2003 | 80 | NA | 62.20 | 30.9-108.9 | 2.47 | ND-11.1 | No | By-product of drinking water disinfection |
| **Total Organic Carbon** (ppm) | 2003 | TT | NA | 1.5 | 1.2-1.7 | NA | NA | No | Naturally present in the environment |
| **Turbidity** (NTU)[1] | 2003 | TT | NA | 0.60 | 0.16-0.60 | NA | NA | No | Soil runoff |

### Tap water samples were collected for lead and copper analyses from 50 homes throughout the service area

| SUBSTANCE (UNITS) | YEAR SAMPLED | AL | MCLG | AMOUNT DETECTED (90TH%TILE) | NO. OF HOMES ABOVE AL | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|
| **Copper** (ppb) | 2003 | 1300 | 1300 | 190 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |
| **Lead** (ppb) | 2003 | 15 | 0 | 2.8 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |

[1]Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. During the reporting year, 100% of all samples taken to measure turbidity met water quality standards.

## Substances That Might Be in Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it can acquire naturally occurring minerals, in some cases, radioactive material; and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Lead in Drinking Water

Lead is a naturally occurring element in our environment. Consequently, our water supply is expected to contain small, undetectable amounts of lead. However, most of the lead in household water usually comes from the plumbing in your own home, not from the local water supply. The U.S. EPA estimates that more than 40 million U.S. residents use water that can contain lead in excess of the U.S. EPA's Action Level of 15 ppb.

Lead in drinking water is a concern because young children, infants and fetuses appear to be particularly vulnerable to lead poisoning. A dose that would have little effect on an adult can have a big effect on a small body. On average, it is estimated that lead in drinking water contributes between 10 and 20% of total lead exposure in young children.

All kinds of water, however, may have high levels of lead. We maintain our drinking water supply at an optimum pH and mineral content level to help prevent corrosion in your home's pipes. To reduce lead levels in your drinking water, you should flush your cold-water pipes by running the water until it becomes as cold as it will get (anywhere from 5 seconds to 2 minutes or longer) and use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead.

For more information, please contact the National Lead Information Center at (800) LEAD-FYI and the Safe Drinking Water Hotline at (800) 426-4791.

## Where Does My Water Come From?

The City of Augusta's water customers are very fortunate because we enjoy an abundant water supply from two sources. The Highland Avenue Water Treatment Facility draws water from the Savannah River, which is pumped via the Historic Augusta Canal Pumping Station to our reservoirs, which hold about 125 million gallons of water. Our second water source is from the Crutaceous Aquifer, hundreds of feet below ground in south Augusta. Combined, our treatment facilities provide roughly 15.5 billion gallons of clean drinking water every year for our customers.

We have completed a source water assessment and a groundwater protection program, but because of security reasons we are prohibited from making them available to the public at large. If you need to find out more about the source water assessment, please feel free to contact Brantley Kuglar at (706) 842-1925.

*N. Max Hicks Treatment Plant*

## How Is My Water Treated And Purified?

The treatment process for surface water consists of a series of steps. First, raw water is drawn from our reservoir and sent to a mixing tank where chlorine is added to pre-disinfect the water. Then, aluminum sulfate and polymer are added to the mixture. The addition of these substances causes small particles to adhere to one another (called "floc") making them heavy enough to settle out as the water slowly moves from one end of the basin to the other. At the end of the basin, the clear water travels over weirs and into flumes that take the water to the filters. The water is then filtered through layers of anthracite, gravel and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added again as a precaution against any bacteria that could form in the distribution system. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, lime (used to adjust the final pH and alkalinity), fluoride (used to prevent tooth decay), and a corrosion inhibitor (used to protect distribution system pipes) are added before the water is pumped to sanitized, underground clear wells, water tanks, and into your home or business.

In groundwater, we have production wells that remove water and send it to a facility where the water is treated. The first step is aeration, which is used to remove volatile organics from the water. Next, we add lime for pH adjustment, fluoride for cavity reduction of teeth, chlorine for disinfection, and finally a polymer for corrosion control. The water then moves through a contact or mixing chamber and then into the clear well where it is held until needed and pumped out into the distribution system for customer consumption.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA (U.S. Environmental Protection Agency)/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

## Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January through December 2003. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Brantley Kuglar, Water Production Superintendent, at (706) 842-1925. Also, you are invited to participate in our public meetings. The County Commission meets on the first and third Tuesday of each month at 2 p.m. on the eighth floor of the Municipal Building.

## System Improvements and Awards

There are big things happening here at Augusta Utilities. First, we broke ground on October 14, 2002 for our new Tobacco Road Facility that will treat 15 MGD (million gallons a day) for our customers in south Augusta. The Highland Avenue Plant is getting a new facelift with upgrades and expansion that will furnish our customers with an additional 15 MGD.

Our water system keeps receiving more awards as the years pass and 2003 should be no exception. We won the "Gold" Awards for both ground and surface water plants for 2002 and should be awarded it again in 2003 because we had no violations. This award is given by the Georgia Water and Pollution Control Association for excellence in water quality. This will be the fourth straight year for the surface water plant and the third for the groundwater plant.

*Aerial view of N. Max Hicks Treatment Plant*

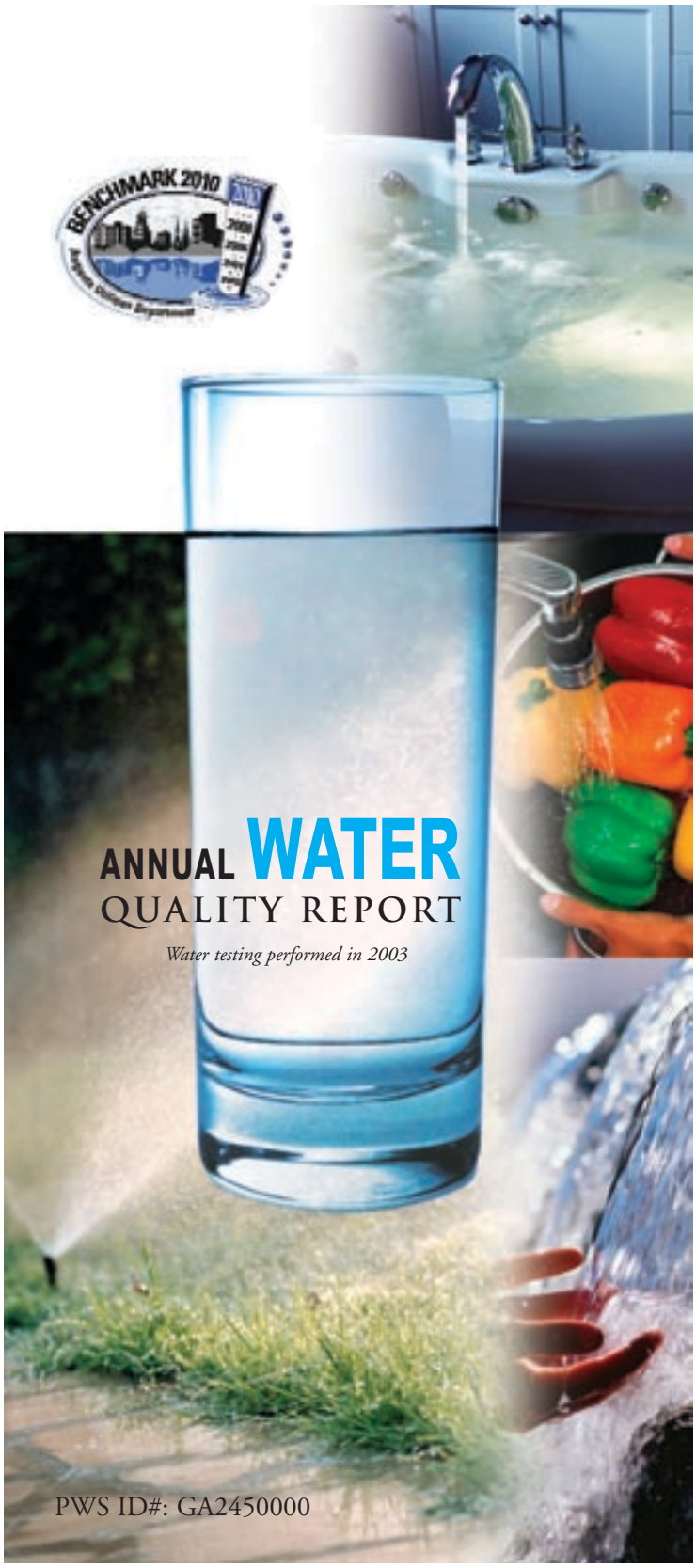
## New Arsenic Regulation

Arsenic contamination of drinking water sources may result from either natural or human activities. Volcanic activity, erosion of rocks and minerals, and forest fires are natural sources that can release arsenic into the environment. Although about 90% of the arsenic used by industry is for wood preservative purposes, it is also used in paints, drugs, dyes, soaps, metals, and semiconductors. Agricultural applications, mining, and smelting also contribute to arsenic releases. Arsenic is usually found in the environment combined with other elements such as oxygen, chlorine, and sulfur (inorganic arsenic); or combined with carbon and hydrogen (organic arsenic). Organic forms are usually less harmful than inorganic forms.

Low levels of arsenic are naturally present in water—about two parts arsenic per billion parts of water (ppb). Thus, you normally take in small amounts of arsenic in the water you drink. Some areas of the country have unusually high natural levels of arsenic in rock, which can lead to unusually high levels of arsenic in water. No Arsenic has been detected in either our surface or groundwater.

In January 2001, the U.S. EPA lowered the Arsenic Maximum Contaminant Level (MCL) from 50 to 10 ppb in response to new and compelling research linking high arsenic levels in drinking water with certain forms of cancer. All water utilities are required to implement this new MCL starting in 2006.

Removing arsenic from drinking water is a costly procedure but well worth the expenditure considering the health benefits. For a more complete discussion, visit the U.S. EPA's Arsenic Web site at www.epa.gov/safewater/arsenic.html.


BENCHMARK 2010
ANNUAL WATER
QUALITY REPORT
Water testing performed in 2003
PWS ID#: GA2450000